

## Libraries

Name	Process	Form Factor
RGO_TSMC16_18V33_FFC_20C_RGMII	FFC	Staggered CUP

## Summary

The (R)GMII library provides the combo driver / receiver cell for both Gigabit Media Independent Interface signaling and Reduced Gigabit Media Independent Interface signaling. It is designed to interface Ethernet PHY to network switch ASICs. This library is provided as a supplement to the GPIO libraries provided by Aragio Solutions.

**GMII Specification Compliant:**  
IEEE 802.3-2005

**RGMII Specification Compliant**  
HP RGMII, version 1.3, 12/10/2000

### ESD Protection:

- JEDEC compliant
  - 2KV ESD Human Body Model (HBM)
  - 200 V ESD Machine Model (MM)
  - 500 V ESD Charge Device Model (CDM)

### Latch-up Immunity:

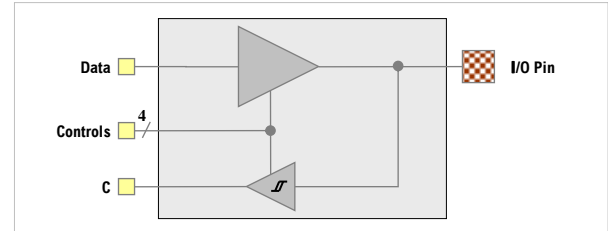
- JEDEC compliant
  - Tested to I-Test criteria of  $\pm 100\text{mA}$  @  $125^\circ\text{C}$

## Characterization Corners

Model	LPE Type	VDD=0.8V	DVDD [1]	Temp
FFGNP	Cbest_CCbest_T	+10%	+10%	-40°C
FFGNP	Cbest_CCbest_T	+10%	+10%	0°C
FFGNP	Cbest_CCbest_T	+10%	+10%	125°C
FFG	Ctypical	+10%	+10%	125°C
TT	Ctypical	nominal	nominal	25°C
TT	Ctypical	nominal	nominal	85°C
SSGNP	Cworst_CCworst_T	-10%	-10%	-40°C
SSGNP	Cworst_CCworst_T	-10%	-10%	0°C
SSGNP	Cworst_CCworst_T	-10%	-10%	125°C

[1] DVDD = 1.8V, 2.5V, 3.3V

## MIP\_BI\_SDS\_33V\_NC



## (R)GMII Combo Driver Features:

- Selectable output slew rate
- GMII mode powered by 3.3V I/O & 0.8V core supplies
- 2.5V RGMII mode powered by 2.5V I/O & 0.8V core supplies
- 1.8V RGMII mode powered by 2.5V I/O & 0.8V core supplies

## Pad Size

Pad	Width	Height	Units
MIP_BI_SDS_33V_NC	25	165	$\mu\text{m}$

Vertical-only and horizontal-only orientations.

## Recommended operating conditions

Description	Min	Nom	Max	Units
$V_{VDD}$ Core supply voltage	0.72	0.80	0.88	V
$T_J$ Junction temperature	-40	25	+125	$^\circ\text{C}$
$V_{PAD}$ Voltage at IO	0		$V_{DVDD}$	V
$V_{DVDD}$ I/O supply voltage	2.97	3.3	3.63	V
$V_{IH}$ Input logic high	1.7	-	-	V
$V_{IL}$ Input logic low	-	-	0.9	V
$V_{IL\_AC}$ Input high voltage, AC	1.9	-	-	V
$V_{IH\_AC}$ Input low voltage, AC	-	-	0.7	V
$V_{OH}$ Output logic high voltage	2.1	-	3.6	V
$V_{OL}$ Output logic low voltage	0	-	0.5	V
$V_{DVDD}$ I/O supply voltage	2.25	2.5	2.75	V
$V_{IH}$ Input logic high	1.7	-	-	V
$V_{IL}$ Input logic low	-	-	0.7	V
$V_{OH}$ Output logic high voltage	2.0	-	$V_{DVDD} + 0.3$	V
$V_{OL}$ Output logic low voltage	$V_{DVSS} - 0.3$	-	0.4	V
$V_{DVDD}$ I/O supply voltage	1.62	1.8	1.98	V
$V_{IH}$ Input logic high	$0.7 \times V_{DVDD}$	-	-	V
$V_{IL}$ Input logic low	-	-	$0.3 \times V_{DVDD}$	V
$V_{OH}$ Output logic high voltage	2.0	-	$V_{DVDD} + 0.3$	V
$V_{OL}$ Output logic low voltage	$V_{DVSS} - 0.3$	-	0.4	V

[1] The lowest supported frequency is 10BASE-T over RGMII

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